REMARKS

Claims 1-12 are all the claims pending in the application. By this Amendment, Applicant editorially amends claims 1-8. The amendments to claims 1-8 were made for reasons of precision of language and consistency, and do not narrow the literal scope of the claims and thus do not implicate an estoppel in the application of the doctrine of equivalents. The amendments to claims 1-8 were not made for reasons of patentability.

In addition, Applicant adds claims 9-12. Claims 9-12 are clearly supported throughout the specification, *e.g.*, see pages 7, 10, and 11.

Preliminary Matters

Applicant thanks the Examiner for initialing the references listed on Form PTO A& B submitted with the Information Disclosure Statement filed on September 6, 2004. Applicant also thanks the Examiner for acknowledging the claim to foreign priority and for confirming the receipt of the certified copy of the priority document.

Claim Rejections under 35 U.S.C. § 103

Claims 1-8 stand rejected under 35 U.S.C. § 103(a). Applicant respectfully traverses this rejection and respectfully requests the Examiner to reconsider this rejection in view of the comments, which follow.

Anderson and Corry

Claims 1, 3, 7, and 8 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 6,748,232 to Anderson et al. (hereinafter "Anderson") in view of U.S. Patent No.

6,442,143 to Corry (hereinafter "Corry"). Of these rejected claims, only claim 1 is independent. Independent claim 1, among a number of unique features, requires:

> evaluating the type of degrade source;
>
> associating a certain threshold value with each type of degrade source; and
>
> comparing the value indicative of the quality of signal with the threshold value corresponding to the source of degrade that is present in the transmission channel.

The Examiner asserts that claim 1 is directed to a method of managing a radio transmission system and is obvious in view of Anderson and Corry. In particular, the Examiner acknowledges that Anderson does not teach or suggest having a number of degrade sources (page 2 of the Office Action). The Examiner, however, alleges that Corry cures the deficient teachings of Anderson. Applicant respectfully disagrees.

The Examiner alleges that Corry teaches having a threshold being compared to a received signal to determine the type of signal degradation including fading or interference (page 3 of the Office Action). Applicant has carefully studied the combined teachings of Anderson and Corry, and Applicant respectfully submits that the combined teachings fail to teach or suggest evaluating the type of degrade source and associating a certain threshold value with each type of degrade source and comparing the value indicative of quality of service (hereinafter QoS) with a threshold of a corresponding source of degrade.

An exemplary, non-limiting embodiment discloses that the QoS indicative of a beginning of degrade of the signal is different for selective fading and flat fading. That is, it would be advantageous to use different threshold values for the two degradation types. Conventional

techniques cannot determine what type of degradation is occurring. As a result, in the conventional techniques, a compromise is carried out by warning the radio system at a certain value, which is either tolerant of an excessive selective fading or warns the system too early (while the flat fading is still acceptable). In the exemplary embodiment, however, each type of source degradation has its own threshold and first, the degradation source is determined, and then the QoS is compared to a threshold corresponding to the determined degradation type. Thereby, by identifying the type of distortion, the monitoring of the performance of the radio transmission system is improved. This passage is provided by way of an example only and is not intended to limit the scope of the claims in any way.

Anderson is related to controlling the power level in a radio communication system. In particular, Anderson addresses the problem of different services for cell phones have different QoS requirements in terms of delay, BER and FER. For example, video services require high delay and low FER, and the equipment must accommodate this QoS (col. 1, lines 28 to 32; col. 2, lines 38 to 53; col. 3, lines 18 to 56). To accommodate for these various services, Anderson discloses varying the threshold depending on the service's QoS requirements.

In Anderson, a received signal is applied to the information bit recovery arrangement to produce a re-encoded channel error rate metric (ReEnc_ChER) and a cyclic redundancy check (CRC) pass/fail signal (CRC.sub.p/f) is applied to an outer-loop 1. The ReEnc_ChER signal is applied to an outer-loop 2 where it is filtered and compared to a target channel error rate signal (ChER.sub.Target) from the outer-loop 1 to drive a small gain step incrementer/decrementer. The outer-loop 1 also produces an output which drives a big gain step incrementer/decrementer.

The outputs from the small gain step incrementer/decrementer and the big gain step incrementer/decrementer are combined to produce an outer loop threshold increment/decrement signal (OLT.sub.+/-), which is used to derive the inner power control loop threshold signal OLT (Fig. 3, col. 4, lines 50 to 65).

Consequently, in Anderson, when the first function of the outer-loop 1 decides that a relatively large step change in the OLT is required, it is implemented and the new channel error rate is measured. Once filtered using previous such measurements, this is then assumed to be a new acceptable channel error rate target for the outer-loop 2 to track. Anderson's outer power control loop is capable of adaptively determining the average channel error rate at the desired QoS point for a particular service. Any variations in the channel can then be tracked quickly by the outer-loop 2 without the need for further CRC event information (col. 6, lines 18 to 31).

In short, Anderson teaches adjusting a threshold value (OLT) for varying power level in a radio communication system based on a particular service type. Anderson, however, fails to teach or suggest evaluating a type of the degradation source. In addition, Anderson teaches calculating and adjusting a threshold (OLT) based on the received QoS. In other words, Anderson does not teach or suggest having a certain threshold being associated with each type of degradation source. That is, Anderson does not select an appropriate OLT but calculates it based on the QoS. Anderson does not associate a threshold OLT with various types of services. Anderson only adjusts the OLT based on the received QoS. In short, in Anderson, there is only one threshold OLT and that threshold is adjusted based on various types of services. Clearly,

Anderson does not teach or suggest associating a certain threshold with each type of degradation source.

Corry does not cure the deficient teachings of Anderson. In general, Corry is related to managing the quality of service in a communication system. In particular, Corry discloses sensing the strength of a received signal and comparing it with a first predetermined threshold. In addition, Corry discloses estimating the quality of the received signal (BER) by comparing the received signal with a second predetermined threshold. When the signal is below the first predetermined threshold, then the signal is fading and the coding gain is increased. On the other hand, Corry teaches that when the signal is above the first predetermined threshold but the signal quality is poor (the signal is below the second predetermined threshold), then there is interference and the slot and/or the frequency of the channel is changed (col. 1, lines 41 to col. 2, lines 43).

In short, Corry only discloses comparing the signal strength to a first threshold value in order to determine if fading exists, and comparing the quality of the signal to a second threshold to determine the quality of a signal (when quality is poor and no fading exists, it is determined that interference exists). Corry, however, fails to teach or suggest having a threshold associated with each type of degradation source. When the signal is fading, Corry teaches that quality of signal will be below the second threshold and the strength of the signal will be below the first threshold, whereas during interference, the quality of signal will also be below the second threshold but the strength of the signal will be above the first threshold. That is, in Corry, each

alleged degradation source is not associated with its own threshold. Corry fails to teach or suggest associating a certain threshold value with each type of degrade source.

In addition, in Corry the quality of signal is compared only with the second threshold. That is, Corry fails to teach or suggest comparing the quality of signal with a threshold value that corresponds to a source of degrade. Corry is no different from the prior art disclosed in the specification in that it has only one threshold value that determines whether quality of signal is poor. In short, Corry fails to teach or suggest comparing value indicative of a quality of the signal with a threshold value corresponding to the source of degrade. In short, Corry does not compensate for the above-identified deficiencies of Anderson.

Therefore, "associating a certain threshold value with each type of degrade source, and comparing the value indicative of the quality of signal with the threshold value corresponding to the source of degrade present in the transmission channel," as recited in claim 1, is not suggested by the combined Anderson and Corry, taken alone or in any conceivable combination, which lack having a threshold for each type of degradation source and comparing the quality of signal with a threshold corresponding to the degradation source. Together, the combined teachings of these references would not have (and could not have) led the artisan of ordinary skill to have achieved the subject matter of claim 1. For at least these exemplary reasons, Applicant respectfully submits that claim 1 is patentable over the combined teachings of Anderson and Corry. Therefore, Applicant respectfully requests the Examiner to reconsider and to withdraw this rejection of independent claim 1. Since claims 3, 7, and 8 dependent upon claim 1, they are patentable at least by virtue of their dependency.

In addition, with respect to the dependent claim 3, the Examiner alleges that it is rendered obvious because the two references teach a criteria structure wherein a comparison can be made to determine what kind of distortion, a degrade service could be (see page 3 of the Office Action). Applicant respectfully disagrees.

Applicant respectfully submits that different distortion sources require different threshold values. In addition, different types of information is used to determine different distortion sources. Determining a threshold value and type of information for one type of the distortion source cannot render obvious a threshold value and information type for a different, unrelated distortion source.

For example, Corry teaches that to distinguish between interference and fading, signal strength could be used. Anderson simply teaches adjusting a threshold (OLT) based on the received signal. But both references do not render obvious distinguishing between the selective fading and flat fading. In other words, these two references taken in any conceivable combination fail to teach or suggest determining whether the degradation source is selective fading or flat fading. The combined teachings of these two references only teach one threshold for the signal strength.

The combined teachings of these references fail to teach or suggest distinguishing between selective fading and flat fading, a threshold value for distinguishing between these two types of degrade sources, and using a first error autocorrelation sample. In short, the combined teachings of Anderson and Corry do not render obvious the type of information and the threshold being used to determine an unrelated distortion source. For at least these additional reasons,

Applicant respectfully submits that claim 3 is patentable over the combined teachings of Anderson and Corry.

Anderson, Corry and Kaewell

Claim 2 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Anderson and Cory in view of U.S. Patent No. 5,752,190 to Kaewell, Jr. et al. (hereinafter "Kaewell"). Applicant respectfully traverses this rejection with respect to the dependent upon claim 1, claim 2. Applicant has already demonstrated that the combined teachings of Anderson and Corry do not meet all the requirements of independent claim 1. Kaewell is relied upon only for its teaching of performing correlation on signals and as such clearly fails to cure the deficient teachings of Anderson and Corry. Together, the combined teachings of these three references would not have (and could not have) led the artisan of ordinary skill to have achieved the subject matter of claim 1. Since claim 2 depends on claim 1, it is patentable at least by virtue of its dependency.

Anderson, Corry and LeCorney

Claim 4 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Anderson and Corry in view of U.S. Patent No. 6,674,719 to LeCorney (hereinafter "LeCorney"). Applicant respectfully traverses this rejection with respect to the dependent upon claim 1, claim 4. Applicant has already demonstrated that the combined teachings of Anderson and Corry do not meet all the requirements of independent claim 1. LeCorney is relied upon only for its teaching of using mean square error when determining the quality of service associated with a signal and as such clearly fails to cure the deficient teachings of Anderson and Corry. Together, the

combined teachings of these references would not have (and could not have) led the artisan of ordinary skill to have achieved the subject matter of claim 1. Since claim 4 depends on claim 1, it is patentable at least by virtue of its dependency.

Anderson, Corry and Balachandran

Claims 5 and 6 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Anderson and Corry in view of U.S. Patent No. 6,108,374 to Balachandran et al. (hereinafter "Balachandran"). Applicant respectfully traverses this rejection with respect to the dependent upon claim 1, claims 5 and 6. Applicant has already demonstrated that the combined teachings of Anderson and Corry do not meet all the requirements of independent claim 1. Balachandran is relied upon only for its teaching of measuring the channel quality information using factors including a trellis code. Clearly Balachandran fails to cure the deficient teachings of Anderson and Corry. Together, the combined teachings of these references would not have (and could not have) led the artisan of ordinary skill to have achieved the subject matter of claim 1. Since claims 5 and 6 depend on claim 1, they are patentable at least by virtue of their dependency.

New Claim

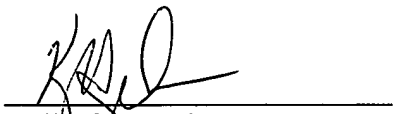
In order to provide more varied protection, Applicant adds claims 9-12. Claim 9 is patentable at least by virtue of its recitation of "selecting a threshold value corresponding to the determined type of the degrade source, from at least two threshold values, where each of said at least two of threshold values corresponds to a type of the degrade source." Claims 10-12 are patentable at least by virtue of their dependency on claim 9.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly invited to contact the undersigned attorney at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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23373
CUSTOMER NUMBER

Date: December 9, 2004